

PSYCHIATRIC DIAGNOSIS OF AFRICAN AMERICANS: DIAGNOSTIC DIVERGENCE IN CLINICIAN-STRUCTURED AND SEMISTRUCTURED INTERVIEWING CONDITIONS

Harold W. Neighbors, PhD, Steven J. Trierweiler, PhD, Cheryl Munday, PhD, Estina E. Thompson, PhD, James S. Jackson, PhD, Victoria J. Binion, PhD, and John Gomez, PhD

Ann Arbor and Detroit, MI, and College Park, MD

This study is a primary data collection that varied patient race and diagnosis and used two diagnostic interviewing conditions: one clinician-structured (phase one) and the other a semi-structured diagnostic instrument (phase two). Four basic research questions are addressed: What is the relationship between race and the hospital diagnosis? How is race related to diagnosis in both research interviewing conditions? Why does diagnostic concordance between the hospital diagnosis and the research diagnosis vary by research interviewing condition? Is diagnostic concordance between the hospital and research diagnosis influenced by patient race? A total of 291 patients completed an interview during phase one, while 665 patients completed an interview during phase two. Blacks were more likely to receive a hospital diagnosis of schizophrenia and less likely to be diagnosed with mood disorder. Patient race was similarly related to the research diagnoses produced in the clinician-structured research condition (phase one). Although less pronounced, a higher percentage of African Americans than whites received a diagnosis of schizophrenia using the semi-structured *DSM-III-R* Symptom Checklist (phase two). The black-white distribution for mood disorders showed that whites were more likely than blacks to be diagnosed with mood disorder. (*J Natl Med Assoc.* 1999;91:601-612.)

Key words: mood disorder ♦ schizophrenia
♦ diagnostic interviewing condition

From the Department of Health Behavior and Health Education, School of Public Health, University of Michigan, Ann Arbor; the University of Detroit Mercy, Wayne State University, Detroit, MI; and the University of Maryland, College Park, MD. Data collection for this study was supported in part by funds from the National Institute of Mental Health. Data analyses were supported from a grant to Dr Harold W. Neighbors from Blue Cross Blue Shield Foundation of Michigan. Reprint requests should be addressed to Dr Harold W. Neighbors, Dept of Health Behavior and Health Education, M-5033, SPH-II 2029, University of Michigan School of Public Health, Ann Arbor, MI 48109-2029.

The National Institute of Mental Health (NIMH) Epidemiologic Catchment Area (ECA) Program's¹ use of the Diagnostic Interview Schedule to estimate the prevalence of diagnostic categories dramatically influenced the nature of African American mental health research. Soon after the dissemination of the ECA results, the epidemiologic task became one of calculating racial* differences in the prevalence of discrete disorders like depression, schizophrenia, and phobia.²⁻⁴ The assumption that the clinical diagnostic process could be effectively translated to the community survey increased interest in studying psychiatric diagnosis for African Americans.⁵⁻¹¹

Numerous studies of patient samples have shown

that whites are more likely than blacks to be diagnosed with a mood disorder and that African Americans are more likely than whites to be diagnosed with schizophrenia.^{12,13} There has been much discussion, however, about how to interpret the meaning of these relationships. Many scholars reject the notion that African Americans actually have higher rates of schizophrenia; neither do they accept the finding of lower rates of mood disorders among blacks compared to whites.¹⁴ Instead, many argue that African Americans are routinely misdiagnosed.

The argument that African Americans are at higher risk of misdiagnosis than whites has been a provocative topic of discussion among psychiatric researchers since the publication of a series of influential papers in the early and middle 1980s.¹⁴⁻²⁰ The fundamental premise espoused by most scholars working on the problem of diagnosis with African Americans is that not enough attention is paid to sociocultural differences in the presentation and interpretation of psychopathology.²⁰⁻²⁴ Specifically, researchers suggest that unfamiliarity with the cultural aspects of African-American behavior and language leads to misinterpretation and misdiagnosis of African-American patients.¹⁹

A first reading of the misdiagnosis literature gives the impression that the routine misdiagnoses of African Americans is a well-documented fact.^{5,6,25-29} A careful review of the empirical research literature reveals, however, that the data bearing on this topic are neither clear nor definitive.^{12,13,15,16,30} Few studies of misdiagnosis collect data directly from African-American patients. Many of the articles in this area are analogue studies,^{31,32} retrospective chart reviews,^{5,33-35} and reviews of the literature.^{10,13,28-30,36-38} Thus, while treatment statistics suggest that schizophrenia is over-diagnosed in African Americans, there remains a need for more in-depth exploration of this issue.

One group of studies is particularly intriguing and

*The term "race" is used to refer to a socially constructed category of limited biological and genetic significance primarily because there is as much genetic variation within any so-called racial group as there is between any two groups. As such, the term "race" overlaps with such concepts as ethnicity and culture. Certainly, there is considerable ethnic variation within both the so-called black and white groups, but it is beyond the scope of the present investigation to present within group ethnic differences at this time. This article uses the term race as a convenient descriptor to refer to a research variable (operationally defined by self-identification of the respondent) shown to be associated with important mental health outcomes.

worthy of closer inspection. This body of work compares diagnostic outcomes under different clinical interviewing conditions. Specifically, the research design compares the admitting diagnosis arrived at through typical hospital or clinic assessment procedures with a research diagnosis usually arrived at using more precise diagnostic criteria and a semistructured diagnostic instrument. Many of these studies find that diagnostic agreement between the hospital's diagnosis and the research diagnosis are lower for black patients than it is for white patients.^{25,39-45} Thus, for example, African Americans admitted to a facility with a diagnosis of schizophrenia are more likely than whites to be reclassified as depressed by the research diagnosis. In other words, research clinicians, using semistructured diagnostic instruments, and hospital clinicians, using more typical interviewing procedures, are more likely to arrive at divergent diagnostic conclusions for African-American patients than for white patients.

Two studies conducted more than 20 years apart serve as illustrations. Simon et al⁴³ found that 15% of the white patients but none of the black patients in their sample received a hospital diagnosis of depression; all of the black patients received a hospital diagnosis of schizophrenia. In contrast, the research project, using a semistructured interview, diagnosed 60% of the black patients as depressed. Similarly, while Strakowski et al³⁵ reported no black-white differences in research diagnoses, African Americans were significantly more likely to receive a hospital diagnosis of schizophrenia. Such patterns are consistent with the misdiagnosis hypothesis, assuming that clinicians using semistructured instruments and explicit criteria are, because of the guidelines and instructions, built into the instrument, less influenced by ethnocentric beliefs and, therefore, more likely to be accurate.^{15,35,46}

When the *Diagnostic and Statistical Manual of Mental Disorders (DSM-III)* was released, numerous authors speculated that the influence of racial and ethnic stereotyping on diagnosis would be reduced because the diagnostic criteria for such disorders as depression and schizophrenia were more clearly specified.^{15,17,18} They saw the specification of defined criteria for each diagnostic category as an attempt to minimize differences in the diagnostic habits of clinicians. As a result, the availability of semistructured diagnostic instruments and the increased dissemination of specific diagnostic criteria permit unique and important opportunities to investigate questions of how racial

factors influence the diagnostic process. Comparing diagnosis under conditions influenced by a semistructured instrument to diagnostic assessments made by clinicians under typical clinical interviewing procedures can reveal instances of diagnostic divergence that can point to mental disorders that are especially challenging for clinicians working with African Americans. The ability to pinpoint and further explore the specific instances of diagnostic divergence that are related to race provide new opportunities for addressing long-standing problems in the diagnosis of African-American patients.

This article presents findings from a study of racial influences on psychiatric diagnosis.⁴⁷ Specifically, this study presents results of a large primary data collection that varied patient race (African American and white), diagnosis (schizophrenia and mood disorder) and two diagnostic interviewing conditions, one clinician-structured and the other using a semistructured diagnostic instrument. These two data collections (referred to as phase one and phase two) were conducted on different patients and used different diagnostic interviewing procedures. Phase one used an interviewing procedure that allowed the clinician complete freedom to pursue the diagnosis, while phase two used a semistructured instrument, the *DSM-III-R* Symptom Checklist.⁴⁸ While some studies have demonstrated that acceptable levels of diagnostic reliability can be achieved when clinicians are trained to use *DSM* criteria along with a semistructured diagnostic instrument, their relationship to the "real-world" conditions within which most clinicians work is unclear. In fact, some are skeptical about the degree to which clinicians actually use *DSM* criteria in making diagnoses.⁴⁹ Decision-making in actual clinical settings involves the integration of professional discretion and accepted models of observation and inference (eg, *DSM*). Given that the purpose of the study was to explore racial influences on diagnosis, we included as one interviewing condition a naturalistic design that would approximate the process of psychiatric diagnostic inference as it is actually practiced.

The use of two research diagnostic assessment procedures permits us, for the first time, to test whether the relationship between patient race and concordance between hospital and research diagnosis differs by interviewing condition. The analysis of data collected under two different diagnostic assessment procedures permits a comparison of the rela-

tive rates of diagnostic concordance across patient race (ie, diagnostic divergence across black and white patients) as impacted by clinician discretion. In short, the ability to view diagnostic divergence under interviewing conditions that differ in the degree to which clinicians adhere to, and thus are influenced by, *DSM* criteria allows a more explicit test of how the use of *DSM* criteria and semistructured instruments affects race and psychiatric diagnosis.

In summary, the logic of the argument is as follows. First, it is assumed that the true prevalence of schizophrenia and depression is equal for blacks and whites.^{1,50} As a result, it is also assumed that the relationship of race to diagnosis reported in numerous rates-under treatment studies, rather than a result of the underlying distribution of psychiatric morbidity in the general populations, results from a tendency to overdiagnose schizophrenia and to underdiagnose depression in blacks relative to whites. This tendency toward misdiagnosis is viewed as a function of a lack of awareness to ethnic and cultural differences in the experience and expression of psychopathology.^{11,12} The influence of these factors on diagnosis is exacerbated by assessment techniques which allow personal biases and erroneous assumptions to influence the diagnostic process. Explicit diagnostic criteria such as those published in the various *DSMs* along with the use of semistructured diagnostic instruments are thought to significantly reduce such clinician bias largely because they reduce clinician discretion by standardizing and clarifying such important variables as diagnostic symptom sets, inclusion and exclusion criteria, and the appropriate sequencing of questions. It is thought these factors encourage a more thorough assessment by discouraging the premature termination of pursuing a particular diagnostic hypothesis, resulting in a more accurate diagnosis.

Based on the literature and the argument outlined above, four basic research questions are addressed. First, what is the relationship between race and the hospital diagnosis? Second, how is race related to diagnosis in both research interviewing conditions? Third, how does diagnostic concordance between the hospital diagnosis and the research diagnosis vary by research interviewing condition? Fourth, is diagnostic concordance between the hospital and research diagnosis influenced by patient race? Based on the ideas and assumptions contained in the race and diagnosis literature and these four research questions, the following hypotheses are tested:

- *Hypothesis 1.* When exploring the relationship between patient race and the hospital diagnosis, African American patients will be more likely than white patients to receive a hospital diagnosis of schizophrenia and less likely to receive a hospital diagnosis of depression.
- *Hypothesis 2.* When exploring the relationship between patient race and the research diagnosis, African American patients will not differ from whites in the likelihood of receiving a diagnosis of schizophrenia or depression.
- *Hypothesis 3.* Agreement between the hospital diagnosis and the research diagnosis will vary with the research diagnostic assessment procedure. Specifically, agreement between the hospital diagnosis and the research diagnosis will be higher when the research diagnosis procedure is clinician-structured (phase one) than when the research diagnostic procedure is guided by the *DSM-III-R* Symptom Checklist (phase two).
- *Hypothesis 4.* Patient race will not modify the pattern of agreement between the hospital diagnosis and research diagnosis. Specifically, we expect higher agreement between the hospital diagnosis and the research diagnosis for the clinician-structured (phase one) condition than for the semistructured instrument condition (phase two using the *DSM-III-R* Checklist) for both black and white patients.

MATERIALS AND METHODS

Research Site

This research was conducted at a 148-bed state psychiatric facility located in a large Midwestern urban setting. The hospital was a state accredited, psychiatric facility and internationally recognized training facility for the full-spectrum of mental health personnel, including psychiatrists, psychiatric social workers, clinical psychologists, occupational therapists, nurses and special education teachers. Because of its location in an urban setting, the hospital occupied a unique position as a major provider in a full range of socio-psychiatric services. The hospital's clinical facility was a natural laboratory setting for research to study the urban chronically mentally ill and, as such, provided a patient population comparable to that treated by other public urban hospitals.

Patients

African-American and white adult inpatients with an admitting diagnosis of schizophrenia (including

schizoaffective disorder but not schizophreniform) or mood disorder (including bipolar, manic episode and major depression) were eligible to participate in the study. To encourage participation, patients were paid \$5 for each completed interview. Patients were allowed to terminate the interview at any time for any reason without losing financial compensation. Each patient was interviewed by clinicians blind to the hospital's admitting diagnosis. A total of 291 patients completed a diagnostic interview during phase one, while 665 patients completed an interview during phase two. This is a large data collection when compared to other diagnostic studies of African Americans, which typically range between 50 and 100 patients^{8,41,51} to a high of around 350.^{26,52}

Interviewer Selection and Training

Research interviewers were recruited from three local psychiatric residency program." Residents who expressed an interest in the study were interviewed by a senior clinical psychologist who served as an on-site clinical coordinator for the study. Fifteen African-American and other ethnic (white, Middle-Eastern, and African) third- and fourth-year psychiatric residents served as interviewers. Applicants for interviewing positions were screened for their experience and ability to work with low-income African-American patients, which the research staff felt was essential to successfully recruit patients into the study. Interviewers were carefully trained on how to approach patients, introduce the study, obtain written consent, and administer the diagnostic instruments.

Instruments

In the clinician-structured (phase one) condition, interviewers were told to conduct a 35- to 40-minute clinical interview with the patient in any manner they chose and to make a *DSM-III-R* diagnosis (making sure to cover the diagnoses of depression, mania, antisocial personality, schizophrenia, and substance abuse disorder), thus approximating normal clinical diagnostic procedures. A shortened version of the *DSM-III-R* Symptom Checklist was used for phase two of the study. The *DSM-III-R* Symptom Checklist consists of a list of *DSM-III-R* criteria for adult psychiatric disorders which guides the clinician in making a diagnostic assessment. While the checklist does not require diagnosticians to ask questions verbatim, it does instruct the clinician to cover the range of symptoms associated with a particular diagnostic category. This instrument covered the

same disorders mentioned in the interviewer instructions for phase one of the study. In this interviewing condition, clinicians were able to probe freely until they were satisfied they had gained a thorough understanding of the symptom in question, which they then coded as present, absent or uncertain. Depending on the pattern of patient responses and symptom codes, the instructions led the clinician through *DSM-III-R* inclusion and exclusion rules to facilitate making a final diagnostic judgement. It is important to realize that the *DSM-III-R* Checklist is a comprehensive, semistructured clinical instrument that does not permit a diagnostician to prematurely "skip out" of pursuing a particular diagnostic category. It requires clinicians to cover the entire group of symptoms associated with a particular diagnostic category, thereby guaranteeing that the *DSM* criteria set for a particular diagnosis is actually applied.

RESULTS

Tables 1 and 2 present the sociodemographic distributions for both phase one and two data collections. In general, both samples are predominantly African American and male. Specifically, the phase one clinical sample is 72% African American and the phase two sample is 81% African American. Table 1 also shows that phase one patients are 60% male, while phase two are 65% male. The average education was 11.4 and 11.1 years for phases one and two, respectively. Patient age was also similar across both study phases. Patients on average were just under 37 years old. Table 2 shows how sex, age and education are distributed for black and white patients for both data collections. In general, the black and white patients do not differ demographically. There are two exceptions. In phase one, African-American patients were more likely than whites to be male. In phase two, whites were older than blacks but the difference was not statistically significant.

Table 3 shows the findings relevant for testing hypothesis 1. Hypothesis 1 predicted that for both study phases, African American patients would be more likely than white patients to receive a hospital diagnosis of schizophrenia and less likely to receive a hospital diagnosis of depression. The percentages in Table 3 show that in phase one, compared to white patients, African Americans were significantly more likely to receive a hospital diagnosis of schizophrenia and less likely to receive a diagnosis of

Table 1. Sociodemographic Characteristics for Study Participants

	Phase One No. (%) (n=291)	Phase Two No. (%) (n=665)
Race		
White	83 (28.5)	124 (18.7)
Black	208 (71.5)	540 (81.3)
Sex		
Female	117 (40.2)	235 (35.3)
Male	174 (59.8)	430 (64.7)
Education		
≤11 yr	102 (37.5)	285 (46.1)
≥12 yr	170 (52.5)	333 (53.9)
Age		
≤35 yr	111 (49.1)	312 (47.5)
≥36 yr	115 (50.9)	345 (52.5)

mood disorder. Sixty-two percent of African-American patients were diagnosed with schizophrenia by the hospital. This compares to 40% of the white patients. For mood disorders, 40% of whites and 28% of blacks were so diagnosed. Blacks and whites were equally distributed in the "other" (ie, substance abuse, organic brain disorder and adjustment disorder) category, 11% and 10%, respectively. Although the data for hospital diagnosis are in the predicted direction with respect to the phase two data collection, the black-white differences are less striking. Blacks were more likely to receive a diagnosis of schizophrenia and less likely than whites to be diagnosed with a mood disorder, but the differences were not statistically significant. Thus, hypothesis 1 is only partially supported.

Because of the ambiguity of the chi-square results, we decided to perform a more rigorous test of hypothesis 1. Hypothesis 1 predicts a main effect of race and diagnosis across study phases, a prediction best tested within a multivariate statistical design. Specifically, a multinomial logistic regression analysis was performed to test the relationships among data collection/interview methods/condition (phase one, phase two), race (black, white) and gender (male, female). This analysis found a main effect of race on diagnosis such that in comparison to whites, black patients were 1.57 times more likely to receive a diagnosis of schizophrenia than mood disorder.

Table 4 addresses hypothesis 2, which predicted that the relationship between patient race and

Table 2. Sociodemographic Characteristics for Phase One and Phase Two Data Collections Separately for Black and White Patients

	Phase One		Phase Two	
	No. (%) White	No. (%) Black	No. (%) White	No. (%) Black
Sex*				
Female	41 (49.4)	76 (36.5)	48 (38.7)	186 (34.4)
Male	42 (50.6)	132 (63.5)	76 (61.3)	354 (65.6)
Age†				
≤35 yr	25 (46.3)	86 (50.0)	44 (36.1)	268 (50.2)
≥36 yr	29 (53.7)	86 (50.0)	78 (63.9)	266 (49.8)
Education				
≤11 yr	26 (33.8)	76 (39.0)	47 (40.2)	238 (47.6)
≥12 yr	51 (66.2)	119 (61.0)	70 (59.8)	262 (52.4)

*Phase one: sex $\chi^2(1)=4.08$, $P<.05$.†Phase two: age $\chi^2(1)=7.94$, $P<.01$.

research diagnostic outcomes would differ by the research diagnostic interviewing procedure. Specifically, we predicted that patient race would be related to the research diagnosis in the clinician-structured condition only. Table 4 shows, however, that patient race was significantly related to the research diagnoses produced in both phases one and two, although the relationship was much stronger for phase one. Looking first at the diagnosis of schizophrenia, Table 4 shows that African-American patients were significantly more likely than whites to receive a research diagnosis of schizophrenia in phase one. Specifically, 56% of the African-American patients compared to 37% of the whites were diagnosed as having schizophrenia using the clinician-structured assessment. Table 4 also shows that the phase one research clinicians found significant race differences in mood disorders, again in the expected direction. Whites were more likely than blacks to be diagnosed with a mood disorder, 47% and 24% respectively. Finally, black patients were slightly more likely to be diagnosed into the "other" category (21% versus 16%). In contrast to the predictions in hypothesis 3, African American patients were also more likely than whites to receive a diagnosis of schizophrenia using the semistructured *DSM-III-R* Checklist. Specifically, 31% of the white patients received a research diagnosis of schizophrenia, compared to 39% of the African-American patients. The black-white distribution for mood disorders is also similar to that found in phase one. Whites were more likely than blacks to receive a

research diagnosis of mood disorder (33% versus 21%). Finally, the *DSM-III-R* Checklist is much more likely than the clinician-structured assessment to rediagnose patients into the "other" category—36% of the white patients and 40% of the African-American patients were diagnosed with something other than schizophrenia or mood disorder by the phase two research clinicians. There were no black-white differences in the distribution of the "other" category.

In summary, Table 4 shows that there is a significant relationship between patient race and the distribution of research diagnoses for phase one (the clinician-structured interviewing condition) and for phase two (the semistructured condition). African Americans were more likely than whites to receive a research diagnosis of schizophrenia and less likely than whites to receive research diagnosis of mood disorder in both interviewing conditions. The findings are not consistent with hypothesis 3, although the black-white differences in the research diagnoses are not as pronounced with the *DSM-III-R* Checklist.

Table 5 presents a direct test of hypotheses 3 and 4 by presenting the concordance between the hospital and research diagnoses for both phase one and phase two. Hypothesis 3 predicted higher agreement between the hospital diagnosis and the research diagnosis for the clinician-structured (phase one) research diagnosis than for the semistructured diagnostic assessment (phase two). Hypothesis 4 stated that patient race would not modify the pattern

Table 3. Relationship between Patient Race and Hospital Diagnoses for Phase One and Phase Two Data Collections

	% Schizophrenia	% Mood Disorder	% Other	n
Phase One*				
White	40	49	11	80
Black	62	28	10	203
Phase Two†				
White	49	39	12	119
Black	58	32	10	515

* $\chi^2 (2)=12.19, P<.01$.
† $\chi^2 (2)=3.39, P=.18349$.

Table 4. Relationship between Patient Race and Research Diagnoses for Phase One and Phase Two Data Collections

	% Schizophrenia	% Mood Disorder	% Other	n
Phase One*				
White	37	47	16	83
Black	56	24	21	207
Phase Two†				
White	31	33	36	124
Black	39	21	40	537

* $\chi^2 (5)=15.31, P<.001$.
† $\chi^2 (5)=8.87, P<.01$.

of agreement stated in hypothesis 3.

Table 5 presents the dichotomous percentage distribution of schizophrenia compared to all other diagnoses for the total sample as well as for blacks and whites. Table 5 shows that the research diagnosticians often disagreed with the hospitals' diagnosis. Twenty-seven percent of the patients in phase one and 44% of the patients in phase two who were diagnosed with schizophrenia by the hospital received a different diagnosis from the research clinicians. The rediagnosis rates for patients admitted with "other" diagnoses (ie, mostly substance abuse) are lower. Twenty percent of phase one and 15% of phase two patients with other nonschizophrenic diagnoses were changed to a diagnosis of schizophrenia by the research clinicians. Table 5 also shows how these basic patterns are modified by patient race. This pattern of rediagnosis occurs for both black and white patients. One-quarter of the black patients in phase one and 43% of the black

patients in phase two are re-classified to some other disorder. Similarly, 38% (phase one) and 48% (phase two) of the white patients admitted with a diagnosis of schizophrenia were reclassified to some other diagnosis.

Table 5 shows the kappa values depicting diagnostic agreement (schizophrenia, not-schizophrenia) between the hospital and research diagnoses. As predicted, agreement between the clinical diagnosis and the research diagnosis was higher in the clinician-structured interviewing condition than in the semistructured interviewing condition. The overall kappa for phase one was .518, while the overall kappa for phase two was .392, a difference that is significant at the .01 level. Thus, hypothesis 3 is supported by the data. Agreement between the hospital and research diagnosis is higher for the phase one clinician-structured diagnosis condition than for the phase two *DSM-III-R* Symptom Checklist condition. Hypothesis 4, on the other hand, was not sup-

Table 5. Relationship between Hospital and Research Diagnosis for Phase One and Phase Two Data Collections: Schizophrenia versus all Other Diagnoses

Admitting Diagnosis	Phase One Research Diagnosis (Clinician-Structured Interview)			Phase Two Research Diagnosis (DSM-III-R Symptom Checklist)		
	% Schizophrenia	Kappa	n	% Schizophrenia	Kappa	n
Total Sample*						
Schizophrenia	73	.518	158	56	.392	356
All other diagnoses	20		124	15		276
White						
Schizophrenia	63	.444	32	52	.372	58
All other diagnoses	19		48	15		61
Black						
Schizophrenia	75	.522	126	57	.392	297
All other diagnoses	21		76	15		215

*The kappas for the total sample are significantly different.

ported. Patient race did modify this basic pattern of agreement comparing phase one to phase two. Among African Americans, agreement between the hospital diagnosis and the research diagnosis was higher in phase one (kappa of .522) than in phase two (kappa of .392). The kappas for white patients were .444 for phase one and .373 for phase two; this difference was not significant.

DISCUSSION

Psychiatric diagnosis is centrally important to quality of care precisely because it predicts and informs treatment. Diagnosis is, however, extremely difficult.⁵³⁻⁵⁵ It is particularly difficult for psychiatry because the diagnosis of mental disorders depends disproportionately on symptoms and behaviors observed and reported by the patient or family, as well as upon complicated inferences made by clinicians on the basis of these complex interpersonal communications. All of this has to be processed and interpreted by the clinician before arriving at a diagnostic decision. It is within this rich social milieu that the issue of racial influences on psychiatric diagnosis must be addressed.

The results presented above, while generally consistent with the predictions set forth in the beginning of the article, speak to the complicated nature of teasing apart the manner in which race influences diagnosis. The bivariate relationship between patient race and the hospital diagnosis shows that blacks are more likely to be diagnosed with schizo-

phrenia and less likely to be diagnosed with mood disorder. These results conform quite nicely to the typical diagnostic patterns seen in most rates-under-treatment studies. Also as predicted, patient race was significantly related to the research diagnoses produced in the clinician-structured research diagnosis (phase one). Thus, it appears that permitting a larger degree of clinician discretion in the interviewing process allowed the "typical" diagnostic patterns (eg, a higher rate of schizophrenia and lower rate of mood disorder for blacks) to emerge. In contrast to what was expected, a slightly higher percentage of African-American patients than white patients received a diagnosis of schizophrenia using the semistructured *DSM-III-R* Symptom Checklist (phase two). The black-white distribution for mood disorders, while less pronounced, also was similar to the typical racial pattern; whites were more likely than blacks to receive a research diagnosis of mood disorder.

The fact that phase one research clinicians were more likely than phase two research clinicians to find a higher prevalence of schizophrenia and lower rate of mood disorder in blacks than whites supports the argument that semistructured diagnostic instruments based on explicit DSM criteria can "dampen" the impact of race on diagnosis. This pattern is consistent with the argument that reducing interviewer discretion lessens the impact of racial factors on diagnostic outcomes. The imposition of more structure influences clinicians to look at patients in a

more comprehensive manner. Preconceived notions clinicians may have about patients (based on factors such as race, gender, socioeconomic status) are less likely to influence how patients are assessed when a semistructured instrument like the one used in this study guides the clinician through the process. Because of the nature of the *DSM-III-R* Symptom Checklist, diagnostic interviews could not be truncated by clinicians who might have been predisposed to arrive at a concrete diagnostic impression very early in the interview. Instruments like the *DSM-III-R* Symptom Checklist (or SCID) also influence clinicians to explore a wider variety of diagnoses than they might on their own. It may be that clinicians, knowing that blacks are more likely to be diagnosed with schizophrenia, arrive prematurely at diagnostic conclusions without adequately pursuing all other possibilities. A semistructured instrument such as the *DSM-III-R* Symptom Checklist encourages clinicians to spend more time with African-American patients and to pursue a variety of possibilities before making a final diagnosis.

Another way to look at these findings is to emphasize that in general, both phase one and phase two research diagnosticians disagreed often with the hospitals' diagnosis. Many patients in both data collections who were diagnosed as having schizophrenia by the hospital received a different diagnosis from the research clinicians. Although a certain amount of "rediagnosis" was expected, it is surprising that so many patients, particularly those admitted with a primary diagnosis of schizophrenia were found by the research team to have a different diagnosis. This pattern of "rediagnosis" occurred for both black and white patients. One-quarter of the black patients in phase one and 43% of the black patients in phase two were reclassified from schizophrenia to some other disorder. Similarly, 38% (phase one) and 48% (phase two) of the white patients admitted with a diagnosis of schizophrenia were reclassified to some other diagnosis. Such findings raise important questions about the accuracy of diagnosis as it is performed under usual, everyday and often difficult conditions.

Cross-cultural studies of psychiatric nosology and diagnosis are problematic because the assumption of significant racial differences in the expression of mental disorder contradicts one of the basic components of the neo-Krapelian perspective—that mental disorders and their corresponding socially constructed diagnostic categories are discrete, distin-

guishable, and invariant across racial and ethnic groups.¹⁷ There remains much skepticism about the utility of explicit diagnostic criteria developed on the basis of expert consensus in the treatment of white adults when many still speculate about the significance of black-white differences.^{22,56} Carter,⁵⁷ for example, points out that depressed blacks may present with multiple somatic complaints rather than dysphoric mood and that these complaints (such as headaches, joint pains, impotence, palpitations, and gastrointestinal symptoms) may "mask" depression in blacks. Alarcon⁵⁸ argues there is a growing body of theoretical and clinical evidence that there are cultural variations in the language of distress for mood and anxiety disorders and that clinicians should be more sensitive to the role and influence of cultural factors in the assessment and interpretation of symptoms.⁵⁹ It is unclear whether *DSM-IV* adequately addresses such cultural differences.

In clinical practice, diagnosis raises important questions about how particular clinical judgments are made. Does a decision to accept the presence or absence of a symptom and the mapping of that symptom onto the nosology result in a misinterpretation of some cultural form because of difficulties in the interaction between the clinician and the patient? Any taxonomic system based on behavioral and interpersonal interaction will raise such questions.^{38,60,61} As a result, there is a need for qualitative data that address the social, interpersonal, and psychological mechanisms that may influence diagnosis. More studies of the judgment process are needed to enhance the understanding of how diagnosis occurs in cross-ethnic contexts. Everyday diagnosis assessment procedures can range from highly structured approximations of research diagnoses to unstructured interviews depending almost entirely on the decision processes of particular clinicians. Unfortunately, there are not enough data addressing such problems in natural diagnostic situations.^{62,63}

These concerns underscore the need to obtain more specific information about what clinicians are actually doing in collecting information and in arriving at a diagnostic judgment with different types of patients. Examination is needed both in standard clinical practice situations and in more structured, research-styled diagnostic situations, the former mirroring the facts of everyday clinical practice, and the latter reflecting the scientific idealization of careful and precise measurement.

The fact that agreement between the clinical

diagnosis and the research diagnosis was higher in the clinician-structured interviewing condition (phase one) than in the semistructured interviewing condition (phase two) implies that typical hospital diagnostic procedures can be reasonably approximated in a research study. This is important because it is precisely this natural, realistic symptom attribution process (as opposed to the more artificial process as influenced by semistructured instruments) that needs to be studied. This procedure is recommended for researchers who want to study clinical decision making within a context that more closely approximates an actual clinical setting.

The present study suggests that greater attention be paid to the interpersonal and cultural aspects of diagnosis interactions. A promising research strategy is the direct examination of the diagnostic judgment process. Diagnosis is essentially an interaction between the observational and inferential capacities of a clinician and the record and interview-based information provided by a patient. Both biased and accurate interpretations of patient diagnostic signs and verbal content originate within the context of an interpersonal interaction.

Qualitative studies that focus on describing interpersonal processes should prove useful because they allow for deeper exploration of phenomena than can be obtained solely with aggregate summaries. Such qualitative studies allow for an examination of clinician judgment strategy and thought process that is naturalistic, detailed, and framed in the clinician's own language providing a realistic sense of the complexity of diagnosis. In future analyses of these data, we hope to illustrate how the combination of qualitative analysis and careful research design can yield a level of detail that facilitates and extends aggregate findings. Only continuing exploration of the details of clinical interactions and judgments will clarify such findings.

Investigating racial differences in diagnostic process and outcomes should be pursued more aggressively because it is a specific example of typical, everyday difficulties of psychiatric diagnosis. It may be that the usual interpersonal communication problems and inferences are merely heightened in the cross-ethnic diagnostic situation. For these reasons, the study and clarification of the processes by which clinicians deal with the diagnostic challenges presented by African Americans is a useful, important, and clinically relevant research endeavor. Given the importance of understanding the influence of race

on symptoms and the possibly inappropriate application of diagnostic criteria developed from white patients to blacks, the central issue becomes one of developing a reasonable approach to the definition and identification of mental disorder.

There will never be total agreement on the diagnosis of African Americans. In instances of diagnostic divergence, it will be difficult to decide which is "correct," because there is no gold standard. For the time being and likely into the future, psychiatric diagnosis will remain a social construction dependent on informed subjective judgment, knowledge of racial differences, and a comprehensive knowledge of *DSM* symptom criteria sets. The best solution is to rely on a diagnostic procedure that inquires about the entire range of diagnostic categories using specific diagnostic criteria in conjunction with instruments that allow enough flexibility to effectively incorporate knowledge and understanding of the patient's culture.

Acknowledgments

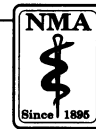
We thank Ms Phyllis Stillman for help in preparing the manuscript and the anonymous reviewers for comments.

Literature Cited

1. Robins LN, Regier DA. *Psychiatric Disorders in America*. New York, NY: The Free Press; 1991.
2. Brown DR, Eaton W, Sussman L. Racial differences in the prevalence of phobic disorders. *J Nerv Ment Dis*. 1990;178:434-441.
3. Williams DR, Takeuchi DT, Adair RK. Marital status and psychiatric disorder among blacks and whites. *J Health Soc Behav*. 1992;33:140-157.
4. Williams DR, Takeuchi DT, Adair RK. Socioeconomic status and psychiatric disorder among blacks and whites. *Social Forces*. 1992;71:179-194.
5. Friedman S, Paradis C. African American patients with panic disorder and agoraphobia. *J Anxiety Disord*. 1991;5:35-41.
6. Kirk SA, Kutchins H. Deliberate misdiagnosis in mental health practice. *Social Service Review*. 1988;62:225-237.
7. Kirk SA, Kutchins H. *The Selling of DSM: The Rhetoric of Science in Psychiatry*. New York, NY: Aldine de Gruyter; 1992.
8. Hendricks L, Bayton J, Collins J, Mathura C, McMillan S, Montgomery T. The NIMH Diagnostic Interview Schedule: a test of its validity in a population of black adults. *J Natl Med Assoc*. 1983;75:667-671.
9. Lawson W, Hepler N, Holliday J, Cuffel B. Race as a factor in inpatient and outpatient admissions and diagnosis. *Hospital and Community Psychiatry*. 1994;45:72-74.
10. Lu F, Lim R, Mezich J. Cross cultural psychiatry: issues in the assessment and diagnosis of culturally diverse individuals. *Ann Rev Psych*. 1995;14:477-510.
11. Whaley AL. Ethnicity/race, paranoia, and psychiatric diagnosis: clinician bias versus sociocultural differences. *Journal of Psychopathology and Behavioral Assessment*. 1997;19:1-20.

12. Neighbors HW, Jackson IS, Campbell L, Williams D. Racial influences on psychiatric diagnosis: a review and suggestions for research. *Community Ment Health J.* 1989;25:301-311.
13. Snowden L, Cheung F. Use of inpatient mental health services by members of ethnic minority groups. *Am Psychol.* 1990;45:347-355.
14. Bell C, Mehta H. The misdiagnosis of black patients with manic depressive illness. *J Natl Med Assoc.* 1980;72:141-145.
15. Adebimpe V. Overview: white norms and psychiatric diagnosis of black patients. *Am J Psychiatry.* 1981;138:279-285.
16. Adebimpe V, Klein H, Fried J. Hallucinations and delusions in black psychiatric patients. *J Natl Med Assoc.* 1981;73:517-520.
17. Adebimpe V. Psychiatric symptoms in black patients. In: S. Turner RJ, ed. *Behavior Modification in Black Populations: Psychosocial Issues and Empirical Findings.* New York, NY: Plenum; 1982.
18. Bell C, Mehta H. Misdiagnosis of black patients with manic depressive illness: second in a series. *J Natl Med Assoc.* 1981;73:101-107.
19. Jones B, Gray B. Problems in diagnosing schizophrenia and affective disorders among blacks. *Hospital and Community Psychiatry.* 1986;37:61-65.
20. Lawson W. Racial and ethnic factors in psychiatric research. *Cult Med Psychiatry.* 1986;37:50-54.
21. Kramer M, Rosen B, Willis E. Definitions and distributions of mental disorders in a racist society. In: Willie C, Kramer M, Brown B, eds. *Racism and Mental Health.* Pittsburgh, PA: University of Pittsburgh Press; 1973.
22. Mezzich JE, Kleinman A, Fabrega H, Parron DL. *Culture and Psychiatric Diagnosis.* Washington, DC: American Psychiatric Press; 1996.
23. Griffith EEH. African American perspectives. In: Mezzich JE, Kleinman A, Fabrega HJ, Parron DL, eds. *Culture and Psychiatric Diagnosis: A DSM-IV Perspective.* Washington, DC: American Psychiatric Press; 1996.
24. Neighbors HW, Jackson IS. *Mental Health in Black America.* Thousand Oaks: Sage Publications; 1996.
25. Mukherjee S, Shukla S, Woodle J, Rosen AM, Olarte S. Misdiagnosis of schizophrenia in bipolar patients: a multiethnic comparison. *Am J Psychiatry.* 1983;140: 1571-1574.
26. Pavkov TW, Lewis DA, Lyons IS. Psychiatric diagnosis and racial bias: An empirical investigation. *Professional Psychology.* 1989;20:364-368.
27. Ruiz D. Epidemiology of schizophrenia: some diagnostic and sociocultural considerations. *Phylon.* 1983;43: 315-326.
28. Wade JC. Institutional racism: an analysis of the mental health system. *Am J Orthopsychiatry.* 1993;63:536-544.
29. Worthington C. An examination of factors influencing the diagnosis and treatment of black patients in the mental health system. *Arch Psychiatr Nurs.* 1992;6:195-204.
30. Good B. Culture, diagnosis, and comorbidity. *Cult Med Psychiatry.* 1993;16:427-446.
31. Jenkins-Hall K, Sacco WP. Effect of client race and depression on evaluations by white therapists. *Journal of Social and Clinical Psychology.* 1991;10:322-333.
32. Loring M, Powell B. Gender, race, and DSM-III: a study of objectivity of psychiatric diagnostic behavior. *J Health Soc Behav.* 1988;29:1-22.
33. Littlewood. Psychiatric diagnosis and racial bias: Empirical and interpretive approaches. *Soc Sci Med.* 1992;34:141-149.
34. Strakowski SM, Shelton RK, Kolbrener M. The effects of race and comorbidity on clinical diagnosis in patients with psychosis. *J Clin Psychiatry.* 1993;54:96-102.
35. Strakowski SM, Lonczak H, Sax K, et al. The effects of race on diagnosis and disposition from a psychiatric emergency service. *J Clin Psychiatry.* 1995;56:101-107.
36. Cheung F, Snowden L. Community mental health and ethnic minority populations. *Comm Ment Health J.* 1990;26:277-291.
37. Gaines A. From DSM-I to DSM-III-R: voices of self, mastery, and the other: a cultural constructivist reading of US psychiatric classification. *Soc Sci Med.* 1992;35:3-24.
38. Killian TM, Killian LT. Sociological investigations of mental illness: a review. *Hospital and Community Psychiatry.* 1990;41:902-911.
39. Lipton AA, Simon FS. Psychiatric diagnosis in a state hospital: Manhattan State revisited. *Hospital and Community Psychiatry.* 1985;36:368-373.
40. Liss J, Weiner A, Robins E, Richardson M. Psychiatric symptoms in white and black in patients I: Record study. *Compr Psychiatry.* 1973;14:475-481.
41. Paradis CM, Friedman S, Lazar RM, Grubea J, Kessleman M. Use of a structured interview to diagnose anxiety disorders in a minority population. *Hospital and Community Psychiatry.* 1992;43:61-64.
42. Raskin A, Crook TH, Herman KD. Psychiatric history and symptom differences in black and white depressed inpatients. *J Consult Clin Psychol.* 1975;43:73-80.
43. Simon RJ, Fleiss JL, Gurland BJ, Stiller PR, Sharpe L. Depression and schizophrenia in hospitalized black and white mental patients. *Arch Gen Psychiatry.* 1973;28:509-512.
44. Tonks CM, Paykel ES, Klerman GL. Clinical depression among Negroes. *Am J Psychiatry.* 1970;127:329-335.
45. Weiner A, Liss JL, Robins E. Psychiatric symptoms in white and black inpatients, II: follow-up study. *Compr Psychiatry.* 1973;14:483-488.
46. Williams D. The epidemiology of mental illness in Afro-Americans. *Hospital and Community Psychiatry.* 1986;37:42-49.
47. Thompson EE, Neighbors HW, Munday C, Jackson IS. Recruitment and retention of African American patients for clinical research: An exploration of response rates in an urban psychiatric hospital. *J Consult Clin Psychol.* 1996;64:861-867.
48. Hudziak JJ, Helzer JE, Wetzel MW, Kessel KB. The use of the DSM-III-R Checklist for initial diagnostic assessments. *Compr Psychiatry.* 1993;34:375-383.
49. Jampala V, Chowdry S, Taylor MA. The use of DSM-III in the United States: a case of not going by the book. *Compr Psychiatry.* 1988;29:39-47.
50. Somervell PD, Leaf PJ, Weissman MM, Blazer DG, Bruce ML. The prevalence of major depression in black and white adults in five United States communities. *Am J Epidemiol.* 1989;130:725-735.
51. Strakowski SM, McElroy SL, Keck PE, West SA. Racial influence on diagnosis in psychotic mania. *J Affect Disord.* 1996;39:157-162.
52. Kilgus MG, Pumariega AJ, Cuffe SP. Influence of race on diagnosis in adolescent psychiatric inpatients. *J Am Acad Child Adolesc Psychiatry.* 1995;34:67-72.
53. Frances AJ. *Philosophical Perspectives on Psychiatric Diagnostic Classification.* In: Sadler JZ, Wiggins OP, Schwartz MA, eds. Baltimore, MD: Johns Hopkins University Press; 1994.

54. Frances AJ, Pincus HA, Widiger TA, Davis WW, First MB. *DSM-IV: work in progress*. In: Mezzich JE, ed. *Psychiatric Epidemiology: Assessment Concepts and Methods*. Baltimore, MD: Johns Hopkins University Press; 1994.
55. Mechanic D. *Medical Sociology*. New York, NY: The Free Press; 1978.
56. Lewis-Fernandez R, Kleinman A. Cultural psychiatry: theoretical, clinical and research issues. *Psychiatr Clin North Am*. 1995;18:433-444.
57. Carter JH. Recognizing psychiatric symptoms in black Americans. *Geriatrics*. 1974;29:96-99.
58. Alarcon RD. Culture and psychiatric diagnosis: Impact on *DSM-IV* and *ICD-10*. *Psychiatr Clin North Am*. 1995;18:449-465.
59. Gaw AC. *Culture, Ethnicity, and Mental illness*. Washington, DC: American Psychiatric Press; 1993.
60. Rogler LH. Culturally sensitizing psychiatric diagnosis: a framework for research. *J Ner Ment Dis*. 1993;181:401-408.
61. Wakefield JC. The concept of mental disorder: on the boundary between biological facts and social values. *Am Psychol*. 1992;47:373-388.
62. Kleinman A. *Rethinking Psychiatry: From Cultural Category to Personal Experience*. New York, NY: Free Press; 1988.
63. Segal DL, Hersen M, Van Hasselt VB. Reliability of the Structured Clinical Interview for *DSM-III-R*: An evaluative review. *Compr Psychiatry*. 1994;35:316-327.
64. Elstein AS, Shulman LS, Sprafka SA. Medical problem solving: a 10-year retrospective. *Evaluation and the Health Professions*. 1990;13:5-36.



JOURNAL OF THE

National Medical Association®

Coming this winter . . .

"Take It to Heart": A National Health Screening and Educational Project in African-American Communities

Iris R. Keys

"Take It to Heart" is a community health screening and education project, jointly sponsored by the NMA and Bayer Corporation, Pharmaceutical Division, designed to increase awareness of the prevalence of hypertension and the risks of coronary heart disease in the African-American community. Free health testing for hypertension and cholesterol was provided to six communities. Participants received an individualized coronary risk assessment outlining key risk areas, followed by consultation with an NMA physician.

One thousand six hundred fifty-one individuals between the ages of 18 and 82 participated. Ninety-five percent were African American. In a preliminary health history, 76% reported insufficient exercise, 23% reported a history of high blood pressure, and 19% had a positive family history of early cardiovascular disease. Test results revealed 40% of the participants had a blood pressure >140/90 mmhg, 52% had cholesterol levels >200 mg, and 42% had a BMI >27. Based on these results, over 76% were calculated to have a moderate to high coronary risk profile.

Evaluation of Low Birthweight in an African-American Population

Irene Ruijter and Joseph M. Miller Jr

This study evaluates risk factors associated with low birthweight in an African-American population. Records of 225 women delivering liveborn nonanomalous infants weighing <2500 g were reviewed. The next parturient, matched for race only, of a similar infant weighing >2500 grams constituted the control. This study was conducted at University Hospital in New Orleans in 1996-1997.

Mothers of infants weighing <2500 g were more likely to not have finished high school, to have received no prenatal care, or five or fewer visits if care was obtained. The mother was more likely to weigh <60 kg, to smoke, or to have used cocaine. Parturients of low birthweight newborns were more likely to have had a prior low birthweight infant and to have had a birthweight <2500 g themselves.

Regression analysis confirmed the importance of three associated parameters: no prenatal care, alcohol use, and low maternal birthweight. Evaluations of low birthweight in African Americans should consider maternal birthweight. Efforts to improve pregnancy outcome should be structured in terms of generations.